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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,501	03/15/2004	Kevin A. Seiling	01-180 CIP	9350
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COHEN & GRIGSBY, P.C. 11 STANWIX STREET 15TH FLOOR PITTSBURGH, PA 15222			EXAMINER VO, HAI	
			ART UNIT 1794	PAPER NUMBER
			NOTIFICATION DATE 12/11/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/800,501

Applicant(s)

SEILING, KEVIN A.

Examiner

Hai Vo

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 6-44 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6-8, 18-24, and 34-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. All of the art rejections are maintained. New ground of rejection is made in view of newly discovered reference to Kohl (US 5,789,453).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 6-8, 34, 40-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831).
Detterman discloses a foam material for use in construction material having a substantially closed cell structure (column 4, lines 5-7). Likewise, it is clearly apparent that the foam of Detterman has predominantly closed cell structure.
Detterman discloses the foam having a specific gravity of 0.3 to 1.5, which is within the range disclosed by the present invention. Detterman uses the same chemical blowing agent for forming the voids as Applicant. Detterman discloses the foam comprising 1 to 50% by weight PVC and glass fibers (abstract, column 4, lines 64-65, and column 11, lines 64-65). Detterman does not specifically disclose the shape of the foam material. Nystrom, however, teaches a construction member comprising a top surface, a concave bottom surface, a first side surface, and a second side surface. The first and second side surfaces are substantially orthogonal to the top surface (figure 2). Nystrom discloses the concave surface of the bottom surface

defining a continuous art between the first side surface and second side surface.

Nystrom teaches the deck plank having four rounded corners. Nystrom discloses the deck plank having a shape similar to the shape of the deck plank of the present invention. Thus, it is not seen that the combined teachings of Detterman and Nystrom could not have achieved the internal closed cells defining 30% to 70% of the volume that is defined within the surface of the construction member because like material has like property. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the construction material having the shape as taught by Nystrom motivated by the desire to shed water from its upper surface and facilitate stacking of the boards one on top of the other during storage and handling (column 2, lines 10-19).

Detterman discloses the foam composition comprising a pvc with the amount within the claimed range (table 1). Detterman discloses the glass fiber added with an effective amount for the intended purpose (column 12, lines 9-13). Detterman does not specifically disclose the amount of the glass fiber. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the glass fiber with an amount instantly claimed motivated by the desire to increase the mechanical strength of the foam material. This is in line with *In re Aller*, 105 USPQ 233, which holds that discovering the optimum or workable ranges involves only routine skill in the art.

Detterman discloses the blowing agent being sodium bicarbonate and azodicarbonamide. Detterman discloses the amount of the blowing agent can be varied to obtain the desired specific gravity of the foam material (column 12, lines 30-34). Detterman does not specifically disclose the amount of the blowing agent. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the blowing agent with an amount instantly claimed motivated by the desire to obtain the desired specific gravity of the foam material. This is in line with *In re Aller*, 105 USPQ 233, which holds that discovering the optimum or workable ranges involves only routine skill in the art.

Neither Detterman nor Nystrom teaches or suggests the processing steps recited in the claims. However, it is a product-by-process limitation not as yet shown to produce a patentably distinct article. It is the examiner's position that the article of Detterman as modified by Nystrom is identical to or only slightly different than the claimed article prepared by the method of the claim, because both articles are formed from the same materials, having structural similarity (see discussion above). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or an obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been

shifted to the applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289,291 (Fed. Cir. 1983). It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Detterman/Nystrom.

Nystrom does not teach the deck plank wherein the radius of the arc of the bottom surface is not less than 50 inches. However, since the arc radius is recognized as a result-effective variable, differences in arc radius will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such particle size is critical or provides unexpected results. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the decking having the bottom surface defining an arc with the radius in the range instantly claimed motivated by the desire to facilitate stacking of the boards one on top of the other during storage and handling. This is in line with *In re Aller*, 105 USPQ 233, which holds that discovering the optimum or workable ranges involves only routine skill in the art.

4. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) as applied to claim 34 above, further in view of Koffler et al (US 6,818,676). Detterman does not teach the use of the physical blowing agent. Koffler, however, teaches a foam composition for

use in fencing having a specific gravity up to 0.9 and made from a physical blowing agent such as nitrogen, CO₂, CFC and butanes (column 7, line 60 to column 8, lines 1-20, column 15, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the physical blowing agent for the chemical blowing agent to generate the voids of the foam material because physical blowing agent and physical blowing agent have been shown in the art to be recognized equivalent blowing agents for the void formation of the construction materials.

5. Claims 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) as applied to claim 34 above, further in view of Patterson et al (US 6,784,230). Detterman does not teach the amount of the blowing agent and the use of citric acid as a blowing agent. Patterson, however, teaches a foam composition for use in fencing comprising up to 3% by weight of the blowing agent such as citric acid (column 10, lines 25-26, and column 4, lines 57-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the chemical blowing agent in the amount instantly claimed motivated by the desire to obtain the desired specific gravity of the foam material.
6. Claims 18, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) and Guntherberg et al (US 6,566,436). Detterman does not specifically disclose the glass fiber diameter. Guntherberg, however, teaches a molded article for use in fencing

comprising reinforcing glass fibers with the fiber diameter in the range from 6 to 20 microns (column 12, lines 1-2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the glass fiber with the fiber diameter as taught by Guntherberg motivated by the desire to obtain an ease of processing and handling of the materials in addition to increasing the mechanical strength of the foam material.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) and Guntherberg et al (US 6,566,436) as applied to claim 18, further in view of Koffler et al (US 6,818,676). Detterman does not teach the use of the physical blowing agent. Koffler, however, teaches a foam composition for use in fencing having a specific gravity up to 0.9 and made from a physical blowing agent such as nitrogen, CO₂, CFC and butanes (column 7, line 60 to column 8, lines 1-20, column 15, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the physical blowing agent for the chemical blowing agent to generate the voids of the foam material because physical blowing agent and chemical blowing agent have been shown in the art to be recognized equivalent blowing agents for the void formation of the construction materials.
8. Claims 18-21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) and Ittel (US 2005/0058822). Detterman does not specifically disclose the length and the size of the glass fiber. Ittel, however, teaches a foam composition for use in fencing

comprising reinforcing glass fibers with the fiber length in the range from 0.001 to 0.03 microns or 25 to 762 microns [0038], [0078]. Ittel teaches the glass fibers having an L/D aspect ratio from 20 to 1000 [0037]. Likewise, the glass fiber has a fiber diameter in the range overlapping with the claimed range. It appears that the bulk density of the glass fiber is dictated by the fiber size and fiber length. Therefore, it is not seen that the bulk density would be outside the claimed range as the fiber size and fiber length are within the claimed ranges. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the glass fiber with the length, size and the bulk density as taught by Ittel motivated by the desire to obtain an ease of processing and handling of the materials in addition to increasing the mechanical strength of the foam material.

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Detterman (US 5,789,453) in view of Nystrom (US 5,474,831) and Ittel (US 2005/0058822) as applied to claim 18, further in view of Koffler et al (US 6,818,676). Detterman does not teach the use of the physical blowing agent. Koffler, however, teaches a foam composition for use in fencing having a specific gravity up to 0.9 and made from a physical blowing agent such as nitrogen, CO₂, CFC and butanes (column 7, line 60 to column 8, lines 1-20, column 15, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the physical blowing agent for the chemical blowing agent to generate the voids of the foam material because physical blowing agent and physical blowing

agent have been shown in the art to be recognized equivalent blowing agents for the void formation of the construction materials.

10. Claims 1, 2, 4, 6-8, 18, 19, 23, 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US 5,789,453) in view of Nystrom (US 5,474,831). Kohl discloses a foam material for use in construction material comprising PVC and glass fibers in an amount of 15% by weight (column 4, lines 60-67). The glass fiber has a length ranging from 2 to 20 mm and a diameter ranging from 3 to 15 microns (column 3, lines 18-20). Kohl does not specifically disclose the foam having a closed cell structure. However, it appears that Kohl uses the same materials and the same process for forming a PVC foam as applicants, i.e., the PVC/glass melt extruded and foamed in a die and solidified in a calibrating and cooling passage located after the extrusion nozzle. Therefore, it is the examiner's position that the closed cell structure would be inherently present. Kohl does not teach the foam having a shape set forth in the claim. Nystrom, however, teaches a construction member comprising a top surface, a concave bottom surface, a first side surface, and a second side surface. The first and second side surfaces are substantially orthogonal to the top surface (figure 2). Nystrom discloses the concave surface of the bottom surface defining a continuous art between the first side surface and second side surface. Nystrom teaches the deck plank having four rounded corners. Nystrom discloses the deck plank having a shape similar to the shape of the deck plank of the present invention. Thus, it is not seen that the combined teachings of Kohl and Nystrom could not have achieved the internal closed cells defining 30% to

70% of the volume that is defined within the surface of the construction member because like material has like property. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the construction material having the shape as taught by Nystrom motivated by the desire to shed water from its upper surface and facilitate stacking of the boards one on top of the other during storage and handling (column 2, lines 10-19).

Nystrom does not teach the deck plank wherein the radius of the arc of the bottom surface is not less than 50 inches. However, since the arc radius is recognized as a result-effective variable, differences in arc radius will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such particle size is critical or provides unexpected results. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the decking having the bottom surface defining an arc with the radius in the range instantly claimed motivated by the desire to facilitate stacking of the boards one on top of the other during storage and handling. This is in line with *In re Aller*, 105 USPQ 233, which holds that discovering the optimum or workable ranges involves only routine skill in the art.

11. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US 5,789,453) in view of Nystrom (US 5,474,831) as applied to claim 18, further in view of Nosker et al (US 5,789,477). Kohl does not disclose the glass fiber having a fiber length set forth in the claims. Therefore, it is necessary and thus obvious for the skilled artisan to look to the prior art for the suitable length of the fiber

glass used in a composite building material. Nosker teaches a fence comprising 50 to 75% polymer component and at least 10% by weight of fiberglass (column 5, lines 25-45) wherein the fiberglass has a length ranging from 0.1 to 20 mm (column 4, lines 55-60). This is within the claimed range. Therefore, in an absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the glass fiber having a length as taught by Nosker because such a length would be sufficient and acceptable for providing a highly oriented, uniform alignment of the fibers over the length of the fencing material. It appears that the bulk density of the glass fiber is dictated by the fiber size and fiber length. Therefore, it is not seen that the bulk density could be outside the claimed range as the fiber size and fiber length are within the claimed ranges.

12. Claims 22, and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US 5,789,453) in view of Nystrom (US 5,474,831) as applied to claims 18 and 34 above, further in view of Koffler et al (US 6,818,676). Kohl does not teach the use of the physical blowing agent. Koffler, however, teaches a foam composition for use in fencing comprising a physical blowing agent such as nitrogen, CO₂, CFC and butanes (column 7, line 60 to column 8, lines 1-20, column 15, lines 5-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the physical blowing agent for generating the voids of the foam material because such is an intended use of the material and Koffler provides necessary details to practice the invention of Kohl.

13. Claims 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohl (US 5,789,453) in view of Nystrom (US 5,474,831) as applied to claim 34 above, further in view of Patterson et al (US 6,784,230). Kohl does not teach the amount of the blowing agent and the use of chemical blowing agent for forming the voids within the foam. Patterson, however, teaches a foam composition for use in fencing comprising up to 3% by weight of the blowing agent that includes azodicarbonamide, sodium bicarbonate and citric acid (column 9, lines 50-60, column 10, lines 25-26, and column 4, lines 57-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the chemical blowing agent in the amount instantly claimed motivated by the desire to obtain a foam material with desired specific gravity and desired foam cells.

Response to Arguments

14. The art rejections based on Detterman have been maintained for the following reasons. Applicant argues that none of the applied references teach or suggest a deck plank made of a composition of PVC. The examiner respectfully disagrees. The examiner directs Applicant's attention to column 4, lines 65-66. The foam comprises CPVC and PVC in an amount ranging from 1 to 50% by weight. It is suggested that the foam comprising PVC in an amount ranging from 82 to 99 wt% based on 100 % by weight of the foam material would be sufficient to remove Detterman as prior art. One skilled in the art would not increase the amount of PVC in the range from 82 to 99 wt% because to do so would destroy the purpose of Detterman, namely a CPVC foam having a good dynamic thermal stability and

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improved impact resistance and good weathering characteristics. The declaration from William Renaud filed on 11/08/2007 have been entered and fully considered. However, the declaration is not found effective to overcome the art rejections because Detterman does disclose the foam made from PVC (column 4, lines 65-66).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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HV

/Hai Vo/
Primary Examiner, Art Unit 1794